Summer 2007

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Electronic Journal of Academic and Special Librarianship

v. 8 no. 2 (Summer 2007)

Teaching and Supporting EndNote at the University of Tennessee: Designing Online Alternatives to High Demand Classes

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Abstract

The University of Tennessee Libraries, like many libraries, has taken the lead on campus in teaching the use of bibliographic management software. One of the challenges of bibliographic instruction is conveying to the user that the instruction is relevant. The challenge we faced with bibliographic instruction for EndNote was somewhat different. Our users, mainly faculty and graduate students, did see the importance of our instruction to their research. The popularity of the classes created a demand that was difficult to meet by classroom instruction alone. We addressed this problem with the creation of an online tutorial that provides on-demand, interactive instruction for users. This article discusses our process of online course creation for bibliographic management support and provides ideas to help others convert a successful classroom course into an effective online instruction tool. It also addresses unexpected outcomes and areas for further investigation.

Background

We began providing instruction in bibliographic management software approximately five years ago. It started rather modestly with one session offered per semester. In

recent years our program has grown and the Library now offers at least twelve regularly scheduled EndNote workshops with 25 students per session each academic year and as specialized classes are needed. These classes routinely fill to capacity and always have waiting lists. In a typical semester the librarians who teach these classes provide one-on-one instruction as well as support by telephone and email. The demand for both classes and support has continued to increase each year.

In reaction to these demands, we developed an online tutorial to provide point of need instruction for our users. "Library instruction on the Web can supplement and complement classroom instruction by expanding the librarian's teaching options and by expanding the student's options of time and place for instruction" (Dewald, 1999). The online environment not only allowed us to repeat what we had covered in class, but also to add more content than the time constraints of the class allowed, and to expand the classroom content to a wider audience.

Process

We started with a successful class on using EndNote for bibliographic management. Bibliographic management software allows users to easily compile libraries of journal and book citations and to greatly expedite the creation of reference lists and bibliographies. We had an interested user group on campus made up of faculty and graduate students. They found the class relevant to their research needs and had a vague notion of what the software could do but were uncertain of how to make the software work with our online resources. The benefit of the software was clear. The complexity of the software, however, was daunting to first-time users. Teaching users to integrate library resources into their research was a natural and meaningful fit for our librarians and a well-received service for our audience. The purpose of our classroom instruction was to help users build and manipulate an EndNote library of citations, to import bibliographic information from UT Libraries databases, and to effectively use the software in their research and teaching.

With instruction sessions filled to capacity, we clearly had a successful class but were unable to meet the increasing demand. We felt it was important for the online tutorial to mirror the content of the classroom instruction. To ensure the tutorial addressed the needs of the users attending our classes, we modeled our online tutorial on the print handouts used in class in terms of organization and exercises. These worked well in the classroom environment and transferred easily to an online format. The print handout logically followed the steps one would take in learning to use the software and represented the evolution of our in-class presentation.

Audience

Our audience was composed of graduate students and faculty. While the audience possessed basic library skills, most of the participants were primarily focused on research and publishing in their respective fields. They were not familiar with using specific library resources with the EndNote software. We made a point at the beginning of each class, to determine the discipline of study of each participant because we wanted to tailor the instruction each student's specific needs. Based on these observations, we used examples and content in class that would be meaningful to the audience.

To simulate the personalization we were able to achieve in the classroom environment, we structured the tutorial so that users may select components of the tutorial that demonstrate certain tasks or focus on specific databases they use in their disciplines. The online environment is well suited to this task because it allows students to learn at their own pace and to choose which pieces are most meaningful to their goals.

In addition, we were responding to a constantly changing technological environment. Vendors recognized the advantage of embedding EndNote support into their database products, so database capabilities and interfaces were constantly changing. Although our audience was neither aware of nor driving these changes, we felt it was our responsibility to enable them to use the full power of the resources available. In the ever-changing online environment, thinking of your audience can translate into acting as a liaison between your users and the software and database developers. In class, we were able to demonstrate the differences in database interfaces and capabilities that affected how records were imported into EndNote. However, it wasn't until we incorporated an online tool that allowed users to choose databases by title to receive instructions for getting their records into Endnote that we saw the users understanding. The users knew which databases they were interested in and it made more sense to them to approach learning EndNote in terms of what they already used and understood. The flexible nature of online tutorials, along with their multi-media content, provides instruction in a way that may appeal to learners whose learning styles are not being addressed in the classroom (Holman, 2000).

Online Environment Expands In-Class Content

The online tutorial format allows users to customize their learning. In a classroom setting, time is limited and the scope of the content must be aimed at a general audience. The basic concepts taught in a classroom can be easily expanded in an online environment. There is also the opportunity to introduce new and advanced concepts and to provide learners with technical tips along the way.

In the days and weeks following our classroom instruction, we received numerous questions about building on concepts we had covered in class. For instance, the classroom instruction focused on learning to use output styles in EndNote such as APA or MLA. A typical question after class would be, "How can I modify an output style to fit the criteria of a publication to which I'm submitting an article?" While it is not practical to help each student modify an output style in a 2-hour class, it is quite easy to demonstrate this task with the aid of screenshots in the online environment.

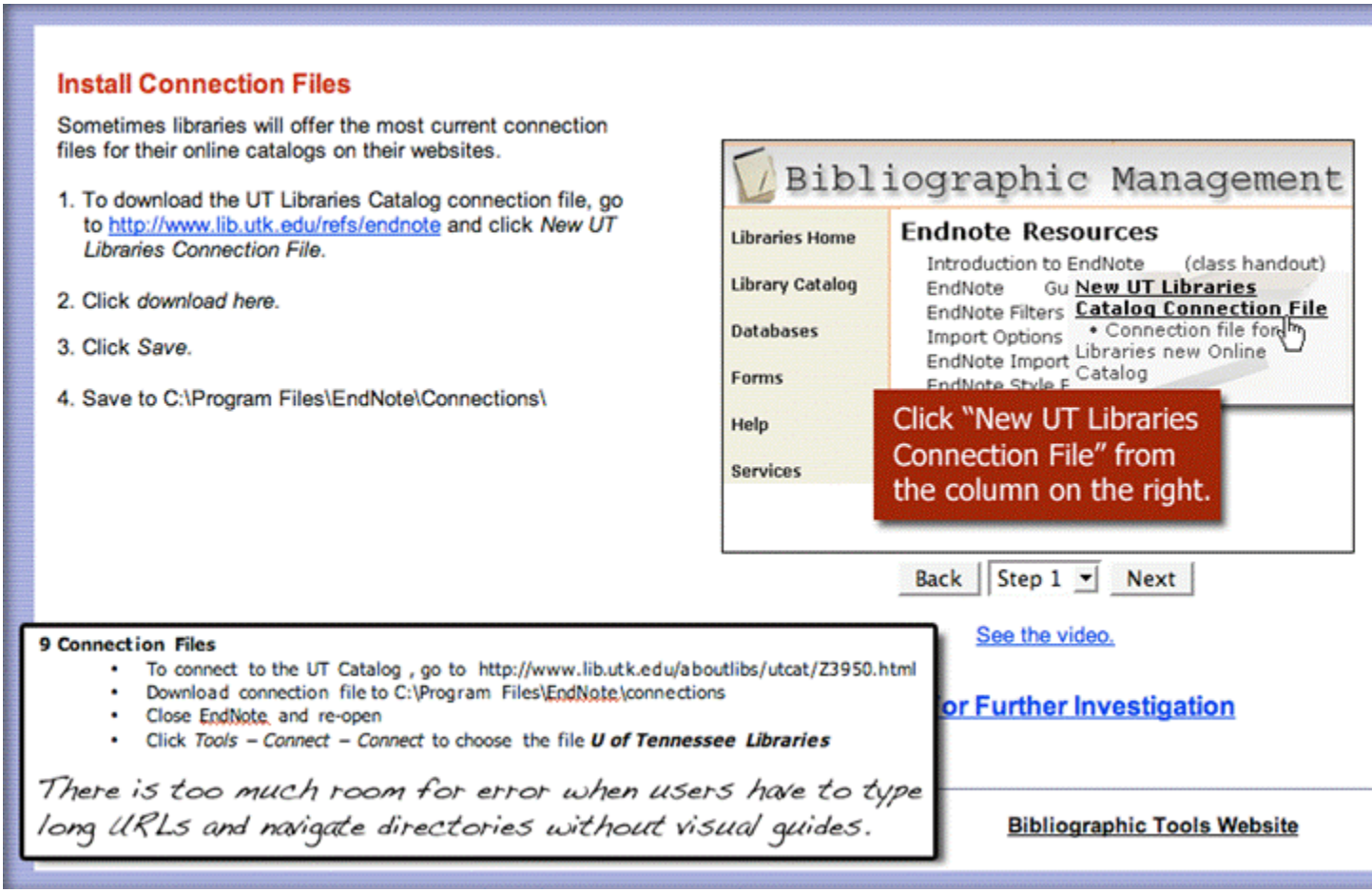

Figure 1. Concept described on handout contrasted with concept described on the web.

Another important question we had to consider was, "How and when will our students use the tutorial?" Most of our in-class students came to us at the point of need. They had begun using the software and had either been unsure on some point or at a loss for how to begin. Oblinger and Hawkins note that "there is a direct correlation between interaction and learning effectiveness" (14). With this in mind, we structured the tutorial so that users could begin at any point.

Making the classroom content available online at the point of need gave us the ability to reach a greater audience and to expand the topics covered in class.

Storyboarding for Content Organization

Storyboarding is the process of visually modeling scenes, content, and possible actions using sketching or a mock-up environment. This technique, traditionally employed by graphic designers in television and film, assists in transferring script material to a mixed media environment. "The content and context of the educational experience should drive the selection of the components of any delivery media mix…" (Berge, 2000) and the best way to create these components is to create manageable sections that allow you to see the information as it will be presented. What takes a few seconds to demonstrate in class, make take two pages, several graphics and four hours of work to show on the screen. Storyboarding ensures that the flow of information not only makes sense but also invites the user to participate.

Storyboarding can be as simple as sketching the text and images as they will appear in the tutorial. There are many software products specifically designed for storyboarding such as OpenMind. Presentation software, e.g. PowerPoint, also works well as a staging environment for text and images.

Navigational Structure

The navigation should make sense to the user. Using a navigational structure that is familiar to the user removes a layer of complexity from the tutorial. The user can focus on learning the task and not on learning to move within the module. Rarely will there be only one type of navigation. For our EndNote tutorial, we included the following navigation types:

- Sectional navigation (where to begin)
- Forward and backward navigation within each section
- Navigation through demonstrative images within section parts
- Persistent navigation linking to *Technical Tips,* and *Glossary*

For a large or multi-part tutorial, it may be necessary to delineate sections of kinds of activities. For example, you can populate an EndNote library with citations, images, etc. We created a main section called "Create and Populate an EndNote Library." We then developed subsections on how to populate that library with citations or with images. This allows the user to decide what he or she has time or need for and makes it obvious where to begin.

Another navigation consideration was a mechanism for moving backward and forward in the tutorial. Many users want to review information or see certain tasks several times. Using backward and forward arrows allows users to progress through and review material in an easy way and provides users with interaction and control.

One of the most difficult pieces of navigation for this particular tutorial was to make the written steps correlate with the example images (screenshots). We ended up using a javascript that allows the user to scroll forward and backward through the example images. The image numbers correspond to the step numbers.

Creating an intuitive, user-friendly navigation structure can be the biggest challenge in porting offline content to an online environment. While the order in which the material is presented can serve as a guide, most online tutorials must account for multiple types of persistent navigation. Persistent navigation is navigation that is available and easily accessible from any point of the tutorial. Some examples include: help buttons, tutorial instructions and a glossary. Any information that supports the main content should have a visible presence on every section of the tutorial.

Content Categories

As previously mentioned, the class outline formed the basis for developing the structure of the online content. Certain skills should be learned in order and more advanced skills must build on previously learned concepts. The online environment allows the user more freedom to learn certain tasks in-depth before going on to other tasks. Sections and sub-categories need to be developed, and in some cases, expanded, to guide users through a task that is not overseen by an instructor. The process of presenting information in well-defined sections and sub-sections allows the user to digest the tutorial in manageable chunks.

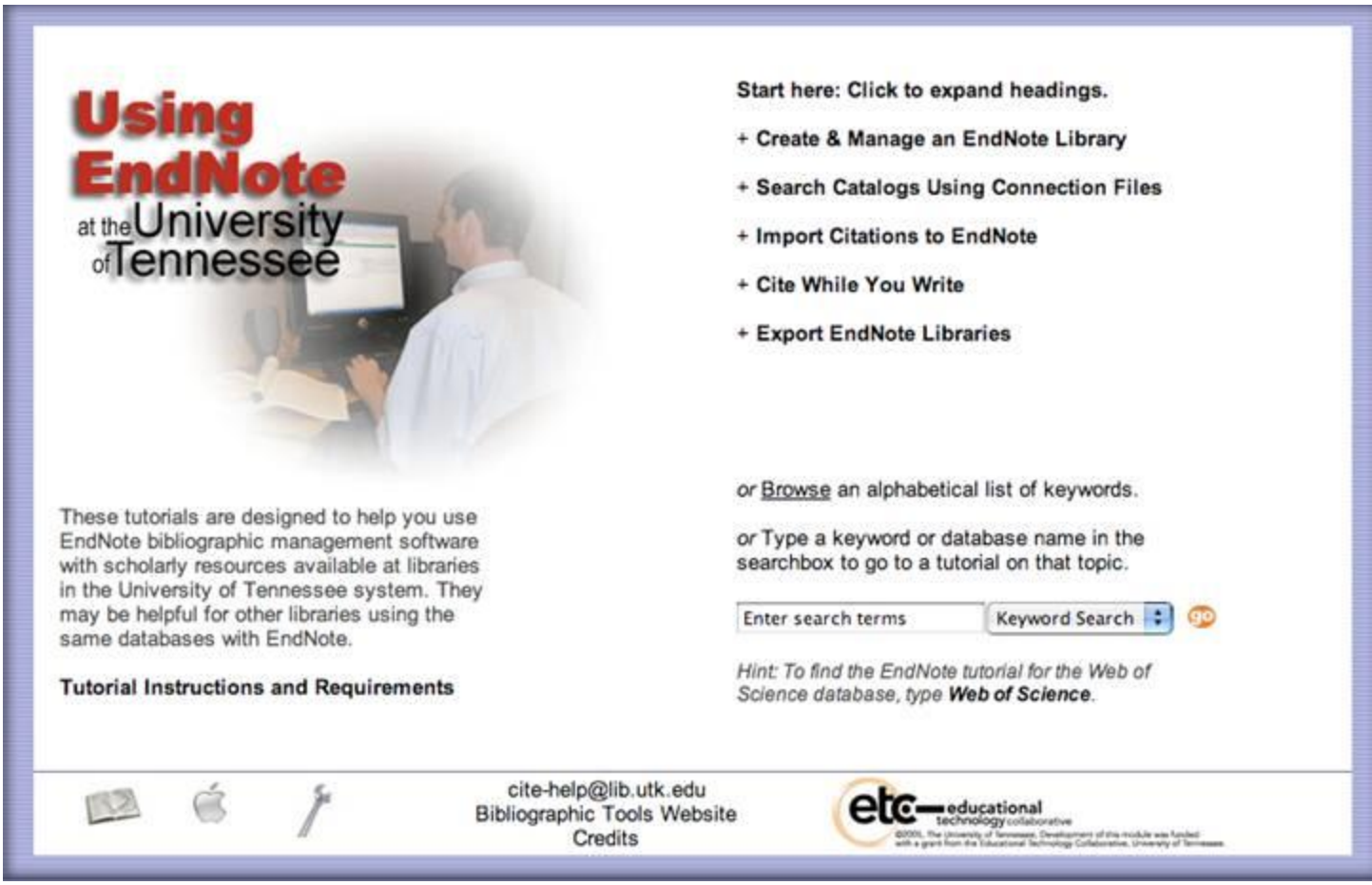

Figure 2. Navigational elements

Tutorial Content

The basis for each section comes from lecture notes but must be transformed into language that accounts for the visual nature of an online tutorial. Writing the text of the tutorial while performing the practice activities in the classroom captures the ephemeral information that is conveyed through face to face instruction. Some things taken for granted in the classroom cannot be taken for granted in the online environment. The non-scripted parts of class such as questions, informal demonstrations, and clarifications should be incorporated into the tutorial content. If students regularly have problems with a certain concept in class and it is handled in an informal, non-scripted way, this must be anticipated and expressed in the new environment. For example, students regularly have problems understanding the concept of a "connection file," a piece of code that allows an online catalog to *talk* to the EndNote software. While we can demonstrate the process in class, the tutorial allows us to illustrate the process with an animation.

Technical Tips

Just because things are supposed to work a certain way doesn't mean they always will. Anticipate problems in an online environment and if you have seen and solved any, place those solutions in an easily accessible place that's available from any page of the tutorial. If the tutorial involves a software product or online service, consider problems the user might encounter related to those. In the EndNote tutorial, we included sections on *Technical Tips* and *Mac Tips* to alert users to differences in software behavior, etc. across platforms and to other problems we had encountered. We provided links to these sections from main content sections where these problems might occur.

Review Content

The best way to find out which parts of the tutorial are unclear is to let someone unfamiliar with the content take the tutorial. External reviewers should be concerned with clarity of content as well as ease of navigation. In our particular situation, we used faculty colleagues and graduate students many of which had limited or no prior experience with the software. That way, we were able to test the tutorial on a demographic that closely matched that of our class.

The tutorial was also evaluated by a team of reviewers in our campus instructional technology support center. This team included educators, graphic designers, and web developers. They evaluated the module for quality of content, usability, and its potential effectiveness as a teaching tool. The module was tested on multiple platforms using several different browsers to insure usability on many different systems. From the review process, we learned what they liked best about the module as well as what they liked least. Based on those results, we made appropriate changes and added clarification where it was necessary.

Results and Recommendations

We expected the online tutorial to serve as a replacement for classroom instruction for those who couldn't attend. Instead, we find we are using the tutorial as a reference tool for specific consultation questions as well as a refresher for students who have previously taken the class. We are able to send people with basic questions straight to the tutorial for help rather than showing them how to do something in person or re-writing instructions each time a question is asked. We have also begun to add modules as users ask questions that aren't already covered in the tutorial. So, the tutorial has become both a knowledge base and a quick reference guide.

Another unexpected benefit was that the tutorial could be used as a teaching tool for future instructors. At the time we created the module, we weren't thinking of it as a way to train new instructors, but it has turned out to be the first step in their process of learning how to use the software and also how to structure their teaching. So, the tutorial has addressed our user demand in that we are able to more easily train other Reference staff to offer support to our ever-growing number of users.

We are now able to send distance learners, unable to come to a workshop, to a viable and interactive tutorial as well. The tutorial gets them started using the software with our databases and resources. The users can begin using the tutorial alongside our library databases immediately, at any hour, and as many times as they want. We have expanded our ability to reach interested users efficiently without taking ourselves out of the equation.

Providing easily accessible, basic information via the online tutorial may also have contributed to an increase in the number of sophisticated questions we are receiving from our EndNote users. The first few years we provided EndNote support on campus, the majority of our questions concerned getting EndNote to work with our library databases. After providing detailed instructions on using EndNote with our library databases, questions now focus on customizing the software to suit specific research needs. Much of the support we do today focuses on creating and/ or modifying filters and output styles. It is difficult to know if the online tutorial is a

major factor contributing to the continued growth of our EndNote user community. Certainly the software has become more user-friendly in recent years and campus faculty and staff have heard that the library offers support. The online tutorial has expanded our ability to reach remote users, increased our support base, and served as an advertisement of our EndNote support services. Since deploying the tutorial, our support statistics have greatly increased and we offer approximately twice as many classes.

Support Type	Year 2005	Year 2006
Email Questions	36	276
In Person Consultations	38	60
Telephone Questions	40	96
Classes per Year	12	17

What do we see for the future? Any tutorial is fluid. It is something that requires constant revision. We have to respond to software changes, database changes, and changes in audience needs. We also have plans for finding ways to integrate the online instruction into the user workflow in a more convenient and meaningful way. While the work that goes into the online tutorial is never complete, the basic concepts remain the same and having the tutorial saves us time that we would otherwise use explaining basic concepts. It gives the students a constant and easily accessible resource. It also serves as a training tool for new instructors. We are no longer restricted to our local campus environment. Our library databases are accessible to many people beyond our campus. Now our instruction is too. These classes have provided an opportunity for librarians to connect to the university community in a meaningful way.

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